The Main Differences

Pressing the pawl/button on the receptacle will safely switch off the DECONTACTOR. The plug can then be withdrawn in complete safety. (Cutaway model shown for illustration purposes)

Like most Meltric products Decontactors feature (see pgs 6-8)

- Spring-loaded butt contacts
- Silver-nickel contact materials
- Dead front construction
- Enclosed arc chambers
- Spring-assisted terminals
- Auxiliary contacts

Only Decontactor™ products also feature:

- UL & CSA switch-ratings
- Horsepower ratings
- Short circuit ratings up to 100 kA in fuse protected circuits

Switch and Hp Ratings

Decontactors are a combination plug, receptacle and disconnect switch in the same device. The Decontactors integral switch technology ensures the safe breaking of resistive and inductive loads (up to 75 hp or 200A) before the plug can be removed from the receptacle.

Decontactors are UL and CSA approved for both "branch circuit" and "motor circuit" disconnect switching, so they are ideal for connecting motors, welding machines and virtually any other electrical equipment.

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UL & CSA Standards

Test requirements and ratings comparison table

To attain their switch ratings, DECONTACTOR™ Series plugs and receptacles passed electrical and mechanical endurance tests, horsepower/locked rotor overload tests, and short circuit make and withstand tests that far exceed the tests passed by ordinary plugs and receptacles. In fact, the tests performed to achieve the Decontactor's switch ratings are the same electrical performance tests required of manual motor controllers and enclosed disconnect switches (UL 508 and UL 98 type devices).

The chart below compares the test requirements for achieving a Switch-Rated Plug & Receptacle listing with those required for a standard pin and sleeve type plug & receptacle listing.

	UL 1682 & CSA 22.2 No. 182.1		UL Subject 2682 (used for both UL & CSA listings)
	Plugs, Receptacles & Cable Connectors of the Pin & Sleeve Type		Switch-Rated Plugs & Receptacles
Test	**Non-Current Interrupting Break** (minimum requirements)	**Current Interrupting** (minimum requirements)	**Motor Circuit/Branch Circuit Disconnect Switching** (Tests passed by DECONTACTOR devices)
Temperature Rise	< 30°C	< 30°C	< 30°C
Voltage Withstand	1000V + 200% of Device Rating	1000V + 200% of Device Rating	1000V + 200% of Device Rating
Overload General Use Devices	3 Operations @ 150% of Rated Current (p.f. = .75 - .80)	50 Operations @ 150% of Rated Current (p.f. = .75 - .80)	50 Operations @ 150% of Rated Current (p.f. = .75 - .80)
Mechanical Endurance (Plus Req'd Electrical Opns)	15-20A = 5000 Opns 21-63A = 2000 Opns 64-250A = 250 Opns	15-20A = 0 Opns 21-63A = 1000 Opns 64-250A = 500 Opns	covered by Electrical Endurance test
Electrical Endurance (With Load)	–	15-20A = 5000 Opns 21-63A = 1000 Opns[1] 64-250A = 250 Opns[1] @ Rated Current & Voltage (p.f. = .75 -.80)	6000 Cycles @ Rated Current & Voltage (p.f. = .75 -.80)
Overload - Locked Rotor (Horsepower Rated Devices)	–	–	50 Operations @ 600% of Full Load Motor Current (p.f. = .40 - .50)
Short Circuit Withstand	–	–	≥ 10 kA+ (600V and ≤ .50 power factor)
Short Circuit Make	–	–	≥ 10 kA+ (600V and ≤ .50 power factor)

[1] Testing alternates between mechanical & electrical operations. This reduces the severity of the electrical test by allowing additional cooling time during electrical testing.
+ All Meltric switch-rated Decontactors are UL listed with short circuit ratings of at least 65kA achieved at 600VAC and ≤ .15 power factor.

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CHESS CONTROLS

Simplify Code Compliance

Decontactors provide a simple and cost effective means of helping facilities to achieve compliance with the National Electric Code and NFPA 70E.

NEC Compliance

Articles 430.101 through 430.113 of the National Electrical Code regulate motor disconnection means (Canadian Electrical Code section 28-600 – 28-604). They require motors to have readily accessible, 'line of sight' disconnects that are either an approved switch or a properly rated plug and receptacle.

- ***430.102*** *A disconnecting means must be located in sight from the motor and driven equipment.*
- ***430.107*** *The disconnecting means must be readily accessible.*
- ***430.109*** *The disconnecting means must be an approved switch or horsepower rated plug & receptacle.*

Meltric's DECONTACTOR Series plugs and receptacles are both horsepower and switch-rated. Thus, they can function as a 'line of sight' disconnect in addition to providing a convenient plug and play power connection for the motor. The need for an auxiliary disconnect switch is eliminated.

NFPA 70E (CSA Z462)

This OSHA consensus standard covers electrical safety related work practices and procedures for employees who work on or near exposed energized electrical conductors or other live circuit parts. Relevant requirements include:

Power must be proven to be off before work can be performed. This requires:

- The safe interruption of the load & opening of the disconnect
- Visual verification/voltage testing to ensure deenergization

The potential electrical hazard must be identified and documented.

- Arc flash risk assessment must be performed
- Flash protection boundaries must be determined

Appropriate steps must be taken to protect persons working near live parts or within the flash protection boundary.

- PPE must be worn based on incident energy exposure levels (cal/cm2)
- Only properly qualified persons are allowed to perform work

To match the functionality of a DECONTACTOR, it would take a pin and sleeve plug plus a non-fused safety switch.

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MELTRIC SWITCH RATED PLUGS

CHESS CONTROLS

Model	Current Interruption Rating*	Horsepower Ratings (see catalog section for other voltages)			Main Contacts Wire Size Capacity		Terminal Type
		240V - 3Ø	480V - 3Ø	600V - 3Ø	Min	Max	
DSN20	Switch-Rated	2 hp	5 hp	5 hp	14 AWG	12 AWG	Screw
DSN30	Switch-Rated	5 hp	10 hp	15 hp	14 AWG	8 AWG	Screw
DSN60	Switch-Rated	7 ½ hp	20 hp	20 hp	12 AWG	4 AWG	Screw
DSN150	Switch-Rated	30 hp	75 hp	75 hp	4 AWG	2/0 AWG	Screw
DS20	Switch-Rated	3 hp	5 hp	7 ½ hp	14 AWG	8 AWG	Screw
DS30	Switch-Rated	3 hp	10 hp	10 hp	14 AWG	6 AWG	Screw
DS60	Switch-Rated	7 ½ hp	20 hp	25 hp	10 AWG	2 AWG	Screw
DS100C	Switch-Rated	7 ½ hp	20 hp	25 hp	10 AWG	2 AWG	Screw
DS100	Switch-Rated	10 hp	30 hp	-	4 AWG	2/0 AWG	Screw
DS200	Switch-Rated	-	-	-	4 AWG	4/0 AWG	Screw
DB30	Switch-Rated	7 ½ hp	10 hp	10 hp	14 AWG	8 AWG	Screw
DB60	Switch-Rated	15 hp	30 hp	30 hp	8 AWG	3 AWG	Screw
DB100	Switch-Rated	30 hp	60 hp	60 hp	1/0 AWG	2/0 AWG	Screw
DR30	Non-Current Interrupting	-	-	-	14 AWG	8 AWG	Screw
DR50	Current Interrupting	-	-	-	14 AWG	6 AWG	Screw
DR100	Current Interrupting	-	-	-	10 AWG	2 AWG	Screw
DR150	Current Interrupting	-	-	-	8 AWG	2/0 AWG	Screw
DR250	Non-Current Interrupting	-	-	-	4 AWG	4/0 AWG	Screw
DR400	Non-Current Interrupting	-	-	-	2 AWG	350 MCM	Screw

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		Model	Amp Rating	Maximum Voltage Rating		Environmental Ratings		Available Casing Materials			Maximum Number of Contacts	
				VAC	VDC	Type	IP	Poly	Metal	SS	Main	Aux.
Decontactors		DSN20	20	600	-	4X	66 + 67	Poly	-	-	3P+N+G	-
		DSN30	30	600	-	4X	66 + 67	Poly	-	-	3P+N+G	2
		DSN60	60	600	-	4X	66 + 67	Poly	-	-	3P+N+G	4
		DSN150	150	600	-	4X	66 + 67	Poly	Metal	-	3P+N+G	6
		DS20	20	600	-	3R	54/55	Poly	-	SS	3P+N+G	2
		DS30	30	600	-	3R	54/55	Poly	-	SS	3P+N+G	4
		DS60	60	600	-	3R	54/55	Poly	Metal	-	3P+N+G	3
		DS100C	100	600	-	3R	54/55	Poly	Metal	-	3P+N+G	3
		DS100	100	600	-	3R	54/55	Poly	Metal	-	3P+N+G	6
		DS200	200	480	-	3R	54/55	-	Metal	-	3P+N+G	5
		DB30	30	600	-	-	67	-	Metal	-	3P+N+G	2
		DB60	60	600	-	-	67	-	Metal	-	3P+N+G	2
		DB100	100	600	–	-	67	-	Metal	-	3P+N+G	4
Standard		DR30	30	600	-	3R	54/55	Poly	-	-	3P+N+G	2
		DR50	50	600	-	3R	54/55	Poly	-	-	3P+N+G	4
		DR100	100	600	-	3R	54/55	Poly	Metal	-	3P+N+G	3
		DR150	150	600	-	3R	54/55	Poly	Metal	-	3P+N+G	6
		DR250	250	600	-	3R	54/55	-	Metal	-	3P+N+G	5
		DR400	400	480**	-	3R	54/55	-	Metal	-	3P+N+G	2

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CHESS CONTROLS

Switch-Rated Plugs & Receptacles

Decontactor™ Series – The Main Differences

Decontactor™ Selection Guide

DSN

Type 4X rated, metal or poly casings. From 20 – 150A (1/2 – 75 hp)

DS

Type 3R rated, metal or poly casings. From 20 – 200A (1/2 – 25 hp)

DB

IP67 rated, metal casings. From 30 – 100A (1 1/2 – 60 hp)

Multipin Plugs & Receptacles

Multipin Plugs & Receptacles

4 – 37 pin connectors in poly and metal. From 2 – 150A

Standard Duty Plugs & Receptacles

DR Plugs & Receptacles

Type 3R rated, poly or metal casings. From 30 – 400A

PN Connectors

IP66+IP67 rated or IP54 rated, poly or metal. From 20 – 30A

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CHESS CONTROLS

Direct Current Plugs & Receptacles

DSDC Plugs & Receptacles

DC current rated, poly or metal casings. Up to 750 VDC

High Ampacity Plugs & Receptacles

PF/PFQ High Amperage Connectors

IP66+IP67 rated, metal construction. From 300 – 600A

SP Connectors

Single pole, connectors up to 600A

CS1000

Single pole, connectors up to 400A

Hazardous Location Plugs & Receptacles

Hazardous Duty Selection Guide

DXN

CSA,ATEX and IECEx rated, poly casings. From 20 – 60A (1/4 – 10 hp)

DX

ATEX and IECEx rated, metallic casings. From 20 – 100A

Multipin

ATEX rated, 25 to 37 pins, 10A

SPeX - Single Pole

ATEX rated, up to 680A, 1000VAC

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CHESS CONTROLS

Product Technology & Safety

The technology behind Meltric's products was developed specifically to address the shortcomings and safety hazards common with pin & sleeve type plugs and receptacles. In 1952, following the observation of an accident with a pin and sleeve device, Gilles Marechal devised the concept of combining the advantages of silver-nickel butt contacts and the load making and breaking capabilities of a switch with the convenience of a plug and receptacle. Shortly thereafter, the first of these products was born. Meltric licensed this technology in the early 1980's and has been supplying its products to North American customers ever since.

Value

With their unique features and capabilities, Meltric products provide users with a safer and more reliable product than competitive pin and sleeve devices. Meltric's butt style contacts provide longer operating lives, optional integral pilot contacts reduce the need for additional connectors and our switch-rated Decontactors can eliminate the need for auxiliary interlocks and disconnect switches, helping users reduce equipment costs. These advantages, together with competitive pricing, short lead times, and 5-year warranty on electrical contacts, make Meltric's products the best overall value in the plug & receptacle/connector market.

For more information or assistance in specifying or applying Meltric products, Please contact the Chess technical team.

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